A Review of the National TB DST Reference Center

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Acknowledgments

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Enrolled/Submitting States

CDPH-MDL
Ed Desmond
Grace Lin
Steven Yu
Project Objectives

• To identify drug resistant TB as quickly and reliably as possible
• To provide PHLs receiving less than 50 TB isolates per year submitted DST access to high-quality drug susceptibility testing in a shared service model
PHL Eligibility and Enrollment
Services Offered

1st

RIF (1 μg/mL), INH (0.1 μg/mL)*, PZA (100 μg/mL), EMB (5 μg/mL)

*For drugs marked with an asterisk, additional concentrations of drug may be tested in certain circumstances.
## Sample Submission Data

<table>
<thead>
<tr>
<th>Year</th>
<th>1st Line</th>
<th>2nd Line</th>
<th>PSQ</th>
<th>2nd Line</th>
<th>PSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015*</td>
<td>147</td>
<td>7</td>
<td>16</td>
<td>14</td>
<td>16</td>
</tr>
</tbody>
</table>

* For 2015 the TB DST started accepting specimens on 3/6/2015
## Drug Resistance Detected in MTBC

<table>
<thead>
<tr>
<th>Type</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mono-Resistance</strong></td>
<td></td>
</tr>
<tr>
<td>RIF</td>
<td>1</td>
</tr>
<tr>
<td>INH</td>
<td>16</td>
</tr>
<tr>
<td>PZA</td>
<td>23*</td>
</tr>
<tr>
<td><strong>Dual-Resistance</strong></td>
<td></td>
</tr>
<tr>
<td>INH-R, PZA-R</td>
<td>3</td>
</tr>
<tr>
<td>INH-R, ETH-R</td>
<td>3</td>
</tr>
<tr>
<td>PZA-R, MOX-R</td>
<td>1</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td>MDR</td>
<td>2</td>
</tr>
<tr>
<td>XDR</td>
<td>1</td>
</tr>
<tr>
<td>PZA-I, ETH-R</td>
<td>1</td>
</tr>
</tbody>
</table>

*Many samples that are PZA-R are *M. bovis*
## Turnaround Time

<table>
<thead>
<tr>
<th>Monitored Interval</th>
<th>Turnaround Time Median (Mean) Days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>Submitted for FL-DST</td>
<td></td>
</tr>
<tr>
<td>from receipt of isolate to RIF report</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>(17.4)</td>
</tr>
<tr>
<td>from receipt of specimen to final report</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>(19.7)</td>
</tr>
</tbody>
</table>
User Survey Responses

- Fielded to 25 Eligible Laboratories
  - 100% response rate
  - 19 labs indicated that they are enrolled
  - 6 labs said no

Reality:
- 16 Labs Enrolled
- Confusion between TB DST Reference Center at CA's MDL and the CDC MDDR?
Maintaining In-House Capacity

• Of the 16 actually enrolled laboratories…
  – 13 have maintained in-house capacity
    • 5 FL-DST
    • 6 Molecular (XPERT or Sequencing)
    • 1 Other (960 MGIT)

Why?

• TB Program
• Molecular Requests
• TAT
• Loss of Competency/Expertise at PHL
Are you satisfied with...?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL-DST TAT</td>
<td>11</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Any difficulties with report format: 11 40

Any difficulties with obtaining reports: 11 40
Rate your Satisfaction with...

<table>
<thead>
<tr>
<th></th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Unsatisfied</th>
<th>Very Unsatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with Consultations (n=13)</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*One PHL responded “very unsatisfied” but their follow-up responses indicate that this may have been an input error and not a true reflection of their satisfaction.
Conclusions

• 1 new enrollment in 2016
• Slight increase in number of submissions
  – 2016: Avg 23 tests/month
  – 2017: Avg 28.5 tests/month
• TAT have improved but MDL continues to work to maintain acceptable TAT and APHL continues to monitor
• Successfully identifying drug resistance
Next Steps

• Continue to follow-up on findings from User Survey
• Addition of SL-DST for Kanamycin
• Continued operations from 2017-2018
• **Electronic Test Ordering and Reporting**
Questions?
TAT: Receipt of Isolate to RIF Result

TAT from Sample Receipt to 1st Line Final Result

2015

2016

Return